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Is Metaphor Unique?

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Introduction

Is metaphor unique as assumed by Aristotle (350 BCE-a, b) and more recently by Grice (1975) and Searle (1979)? Is metaphor more creative than literal language? Are the processes involved in making sense of nonliteral language different from those involved in interpreting literal utterances? The following literal pun (1) and the (originally Hebrew) metaphors in (2) and (3) (in italics for convenience) might help illustrate these questions. The first example appeared in *Haaretz in English*; the second example appeared in an editorial of the far-left Israeli magazine *Etgar*; the third example projects the attitude of a rightwing Israeli journalist toward the prospective Road Map Agreement between the Palestinians and the Israelis:

(1) Till barriers do them part

Together, the separation fence, the Law of Citizenship, and the curfew are breaking down and restructuring marriages in Arab society (Ettinger, 2004).

(2) The anti globalization movement...refused to point an accusing finger at the political address responsible for the economic chaos – the White House and its satellites. Bin Laden made concrete, even if lunatic, the insubstantial slogan of the [anti globalization] movement. (“Smash Capitalism,” 2003: 3)

(3) Yeah, during two years they [the Palestinians] are *to pay lip service* {Hebrew: ‘lip tax’} to democracy. But they are not required *to pay hard cash* – to truly and sincerely accept the existence of a Jewish state. (Shavit, 2003)

The first example is a literal pun. It gives rise to two literal meanings: a novel one, which is made explicit (*Till barriers do them part*) and a salient one, which is evoked by the explicit and which is associated with the marriage vows (*Till death do us part*). The interplay between these two meanings, allowed by the activation and retention of both, makes up the message of the utterance. It alludes to the damage inflicted on Palestinian families by the Israeli brutal occupation. The second example seems to invite activation and retention of the salient, nonliteral sense of a conventional metaphor – the anticapitalism sense of *Smash Capitalism* – alongside its less salient, somewhat literal meaning which evokes the sense of real smashing of some of the symbols of capitalism (on meaning salience, see Giora, 1997, 2003; see also section on “Models of Metaphor Processing,” this chapter). The third example features a (Hebrew) conventional idiomatic phrase – *pay lip service* – which is suggestive of an apparent, insincere commitment. In addition, it features a novel metaphor – *pay hard cash* – which, in the given context, is an

extension of both the literal and nonliteral senses of the previous idiom, alluding to the opposite of that idiom, that is, to some substantial, binding commitment.

Do we engage in different processes, then, when trying to make sense of such literal and nonliteral uses? Admittedly, in all the examples, the salient sense of the expressions cannot escape our mind even when apparently inappropriate: The novel literal use of *Till barriers do them part* activates the salient literal vow *Till death do us part*. The novel literal use of *Smash Capitalism* allows an insight into the salient nonliteral sense of the metaphor – the anticapitalism protest – on top of the novel literal interpretation of the collocation alluding to the physical destruction of trade center buildings, which is now brought to the fore (see also Giora, Fein, Kronrod, et al., 2004). Similarly, the novel metaphor in (3) – *pay hard cash* – draws on the conventionalized nonliteral use of *pay lip service* intending, however, to get across its opposite – a binding commitment, while echoing the literal monetary sense.

The third example is particularly interesting because it also resonatesⁱ with metaphors, appearing earlier in the text (see 4). These also include a negative metaphor (*does not include such an obvious barter*) whose salient literal meaning derives from the same semantic field (of financial or monetary exchanges) as the metaphors that follow it:

(4) The road map does not include such an obvious *barter*. Instead it goes back to the old mistake of giving a huge *credit* to a suspicious *loaner*. It gets back to the belying medicine of postponing the *pay* day. (Shavit, 2003)

Such extensions (as seen in both 3 and 4) suggest that the literal meaning of the negative metaphor has been activated (via intra-lexical priming; see Fodor, 1983: 81) and has not been suppressed automatically even in the presence of a contextual cue to the

contrary. Instead, it has been retained for future purposes. Thus, even when a local contextual cue such as negation alerts the comprehender to the contrary, suppression is kept on hold until late context either invites it or not (see, Giora, Fein, Aschkenazi, & Alkabets-Zlozover, 2007).

These literal and metaphoric examples help shed light on an enduring question in the pragmatics and psycholinguistics of metaphor. They suggest that, contra the traditional view, which assumes the uniqueness of metaphor (Grice, 1975; Searle, 1979), metaphors and literals need not differ but instead may involve similar processes and products. In what follows, I will adduce evidence that argues against the uniqueness hypothesis.

Apparently, some of the issues to be discussed here belong in the early stages of comprehension, disclosing early processes, while others belong in the later interpretation processes, disclosing utterance products (on the time course of metaphor interpretation involving early *processes* and late *products*, see Gibbs, 1993, 1994: 115–119; see also section on “Models of Metaphor Processing”). Early stages pertain to bottom-up, automatic, and stimulus-driven processes such as lexical access; later processes pertain to the products of these processes, which involve top-down procedures such as inferencing, loosening or narrowing of initial outputs, and suppression or even retention of inappropriate outputs. The various models of figurative language have different assumptions and predictions concerning the time course of metaphor understanding in as far as early *processes* and late *products* are concerned.

Models of Metaphor Processing

Metaphor theories can be viewed as either advocating the supremacy of context effects or subscribing to the priority of lexical effects. Though they all acknowledge the effects of context on the products of metaphor, they disagree as to the size of the effect and its time course. The various assumptions have different implications with regard to the issue of metaphor uniqueness.

On the Temporal Priority of Context Effects

The Direct Access View

Most contemporary theorists advocate the superiority of contextual over lexical processes. They assume a single mechanism that is sensitive to both linguistic and nonlinguistic information. On this view, contextual information interacts with lexical processes very early on, and when context is sufficiently rich and supportive, it allows comprehension to proceed smoothly and seamlessly, selectively accessing appropriate meanings while blocking incompatible albeit salient ones. Consequently, early processes should involve no contextually inappropriate phase (Ortony, Schallert, Reynolds, & Antos, 1978). This should be particularly true of meanings of complete phrases or sentences (Gibbs, 1994).

Given that a strong prior context allows early processes to involve no inappropriate outputs, no suppression or retention of such outputs is anticipated when later interpretation processes take place. That is, a view that attributes to (rich) contextual information a major role in the early stages of comprehension, predicts no differences between metaphors and literals embedded in such a context (see Ortony et al., 1978).

This view, however, will find it difficult to account for the involvement of “inappropriate” literal meanings in metaphor comprehension and interpretation (examples 2–4; though one could argue they might be reactivated).

The Constraint-Based Satisfaction Model

A more recent version of the direct access view is the constraint-based satisfaction model.

According to this view, comprehension is achieved through parallel satisfaction of multiple probabilistic constraints, including constraints from lexical representations.

According to constraint-based models, if contextual constraints outnumber lexical constraints, they will win over, and comprehension will proceed seamlessly, tapping only appropriate meanings (Katz & Ferretti, 2001, 2003; Pexman, Ferretti, & Katz, 2000).

According to this version of the direct access view, differences in processes would be a result of difference in the amount of constraints biased in favor of one interpretation rather than between literals and metaphors.

On the Temporal Priority of Lexical Meanings

The Standard Pragmatic Model

The direct access view argues against the standard pragmatic model (Grice, 1975; Searle, 1979), which posits the priority of *literal* meanings. This view, which assumes that literal meanings of both words and sentences should be accessed initially, regardless of contextual information, concedes that the consequences of initial input analyses are accidental. While they may result in contextual fit, they might just as well lead to

mismatch with prior context, which would then have to be redressed. Alleviating such dissonances would, in many cases, invite suppression of contextually inappropriate outputs. The standard pragmatic model, then, predicts initial literally oriented processes for both literals and metaphors, with a second stage of adjustment in the case of metaphors only. According to this model, somewhat downstream, literal meanings of metaphors will have to be suppressed. Much like the direct access view, this view will find it difficult to account for the involvement of ‘inappropriate’ literal meanings in metaphor comprehension and interpretation as shown by examples 2–4, though, again, one could argue that these meanings might be reactivated.

The Underspecification View

The underspecification model of metaphor comprehension (Frisson & Pickering, 2001; Pickering & Frisson, 2001) also posits the priority of lexical effects. It assumes that lexical entries are stored as highly abstract, underspecified entities. Initially, metaphors (and other polysemies) are accessed via a single, abstract core. Context effects should occur following lexical access and determine the contextually appropriate, specific meaning of the metaphor. Results indeed show that only when resolution is required, comprehenders use contextual information to home in on the more specific, contextually appropriate sense.

Somewhat similar views are entertained by relevance-oriented theoreticians (Carston, 2002; Sperber & Wilson, 1986/1995, this volume). Though there is no commitment to an underspecification view, metaphor interpretation is taken to be fully shaped by context only following initial access of minimal output – logical forms and

linguistic meanings. The final interpretation is achieved via loosening and narrowing down of these initial outputs (Carston, 2002: 323–359). Narrowing down involves the extension of conceptual material and is thus consistent with an underspecification view of the lexicon. Loosening, which involves the subtraction of conceptual material, seems less so. Discarding features of a concept that has already been accessed, however, is in line with the view that metaphor interpretation involves suppression of inappropriate features. But this might just as well be true of literals as well. On this view, then, literals and metaphors need not differ.

The Graded Salience Hypothesis

Following the modular view (Fodor, 1983), the graded salience hypothesis (Giora, 1997, 1999, 2003; Peleg, Giora, & Fein, 2001, 2004) assumes two distinct mechanisms that run parallel. One is bottom-up, stimulus driven, and sensitive only to linguistic stimuli; another is top-down, predictive and integrative, and sensitive to both linguistic and extra-linguistic knowledge. Unlike the traditional modular assumption (Fodor, 1983), however, the graded salience hypothesis assumes that the bottom-up, modular mechanism is salience sensitive: more salient responses – responses coded in the mental lexicon and foremost on our mind due to, for example, conventionality, frequency, familiarity, or prototypicality – are accessed faster than and reach sufficient levels of activation before less salient ones. Accordingly, such responses would be accessed upon encounter, regardless of contextual information or authorial intent. Low salience responses, however, may not reach a threshold and may not be visible in a context biased toward the

more salient meaning of the stimulus. Nonsalient meanings are not coded. They are constructed on the fly as a result of top-down processes.

Though this model seems to argue in favor of the temporal priority of salient responses, it does not discard the possibility of the temporal priority of nonsalient meanings. Rather, a highly predictive context may facilitate responses on its own accord very early on. Still, it would not interfere with automatic, stimulus-driven lexical processes and would not block activation of salient responses. Though the contextual mechanism has a predictive role that may speed up derivation of the appropriate responses, it would not obstruct inappropriate, coded responses upon encounter of the stimulus. Indeed, contextual information may be strong and even faster than lexical processes, so that it may evoke appropriate meanings even before the linguistic stimulus is encountered. This may be particularly true when the stimulus is placed at the end of a strong sentential context, after most information has been accumulated and integrated, allowing effective guessing and inferential processes. However, it does not interact with lexical processes but runs parallel (Peleg et al., 2001, 2004). Unlike the modular view (Fodor, 1983), then, the graded salience hypothesis does not always predict slower contextual effects and resultant sequential processes. Neither does it assume that activation of a whole linguistic unit should be accomplished before contextual information comes into play. Rather, across the communication route, context and linguistic processes run parallel, with contextual information evoking meanings on its own accord, yet affecting only the end product of the linguistic process.

Additionally, the graded salience hypothesis does not assume that contextually inappropriate meanings should be discarded unconditionally on account of their local

contextual misfit (for a different view, see Gernsbacher, Keysar, Robertson, & Werner, 2001; Spinney, 1979). Instead, it views late processes such as retention of relevant and irrelevant information and suppression of contextually inappropriate outputs as more attentive to global discourse considerations, such as global coherence, than to local ones, such as local coherence (Giora, 2003; Giora, Fein, Aschkenazi, et al., 2007). Thus, even if the literal meaning of metaphors seems irrelevant in a given context (local coherence; negation), it might be retained because it is perceived as instrumental in constructing the appropriate metaphoric interpretation or as conducive to the interpretation of the next expression in line (global coherence). This might explain the availability of the apparently inappropriate literal meaning of *pay lip service* in the extended novel metaphor *pay hard cash* (3) which follows it (global resonance). This may also account for the availability of this literal meaning in the metaphors (*credit; loaner; pay day*) that follow the negative metaphor (*do not include such an obvious barter*) in (4). This might also explain the availability of an inappropriate, metaphorically related meaning (*fast*) in the following (originally Hebrew) negative metaphor (in bold for convenience), which was retained in the mind of the producer echoing his interlocutor's thought, in spite of a local cue to the contrary:

(5) A: Listen, with your car, you are there, maximally, in 5 minutes...

B: Come on... My Daihatsu is not a jet. A *fast* car... superb car ... But there's a limit ...

(Cited in Altit & Arvatz, 2005; Giora, 2006)

This view of suppression and retention, then, runs counter to the assumptions of the alternative models and suggest that both retention and suppression are not automatic but attentive to global discourse considerations.

According to the graded salience hypothesis, then, the relevant distinction is not between metaphors and literals but between salient and less salient meanings. Salient meanings will always be accessed, which explains the involvement of such meanings in examples 1–5, regardless of figurativeness or literality. Less salient meanings will lag behind. Retention and suppression will affect salient and less salient meanings alike, whether or not they are “appropriate,” depending on their discourse role.

Context Effects:

Inhibition/Suppression/Retention

Although the direct access models and the standard pragmatic approach disagree as to whether early processes are sensitive to prior contextual information, they agree that later processes are. This is also true of the relevance theoretic account and the underspecification model. On these views, the output of later integration processes involves only contextually appropriate meanings. Even if inappropriate senses have infiltrated early processes, they would later be subdued by a rich and supportive context and be replaced with contextually appropriate alternatives. Thus, if *My surgeon is a butcher* involves reference to a literal “butcher” whose salient property is “using knives to chop messily or clumsily,” this literal property would be discarded once the abstract metaphoric sense of “messiness and clumsiness” is constructed (Glucksberg, Newsome, & Goldvarg, 2001). In contrast, according to the suppression/retention hypothesis supplementing the graded salience hypothesis (Giora, 2003; Giora & Fein, 1999b), suppression of salient, “inappropriate” meanings is not automatic. It would take effect

only if meanings interfere with constructing the appropriate interpretation. However, if these meanings are not detrimental to comprehension or if they are conducive to the appropriate interpretation (e.g., the literal meaning of metaphors and ironies), suppression would not be triggered (see Giora, Fein, Laadan, Wolfson, Zeituny, Kidron, Kaufman, and Shaham, 2007). Indeed, at times, salient meanings would not be suppressed even when they interfere with contextually appropriate interpretations, because they would be too hard to quench on account of their high salience (e.g., the idiomatic meanings of familiar idioms, see example 9). Theories, then, that do not subscribe to early inhibition processes, acknowledge later suppression effects whether automatic or pragmatically oriented.

According to the direct access view and the constraints-based model, however, one could, in fact, expect early inhibition of inappropriate meanings. Thus, when context is strong and supportive, initial activation of inappropriate word and sentence meanings will be aborted. Such processing should result in exclusive activation of contextually appropriate products. Inhibition, then, relates to early context effects, which should be able to monitor initial activation of responses.

Findings

Inhibition of Contextually Inappropriate Properties

Is there support for the view that context penetrates lexical processes and selects contextually appropriate meanings exclusively while inhibiting incompatible ones? In Peleg et al. (2001), we argued against the inhibition hypothesis. Using lexical decision

tasks, we demonstrated that even a strong and supportive (Hebrew) context (*Sarit's sons and mine went on fighting continuously. Sarit said to me: These delinquents won't let us have a moment of peace*) did not inhibit salient but contextually incompatible meanings (“criminal”) of targets (*delinquent*) which were as available as contextually compatible meanings (“kids”). This was true even where contextual information should have been highly effective, as when target words were placed at the end of sentences and probed immediately afterward (*Sarit's sons and mine went on fighting continuously. Sarit said to me: A moment of peace won't let us have these delinquents*).

Similarly, in Rubio Fernández (2007), following figuratively biasing contexts, such as *John doesn't like physical contact. Even his girl friend finds it difficult to come close to him. John is a cactus.*, salient, literal meanings, whether directly relevant to the (novel) metaphor (“spike”) or not (“plant”), were accessed immediately at 0 msec delay and retained even at a 400 msec delay.

Likewise, in Hasson and Glucksberg (2006), “inappropriate” figurative meanings (“fast”) of negative metaphors (*The train to Boston was **no rocket***) related to the metaphoric target (*rocket*) were accessed initially in spite of a contextual cue (negation) to the contrary. They were accessible at short and medium delays of 150 and 500 msec.

Note that even when, due to a strong context, reading times of literal and nonliteral interpretations of whole sentences did not differ significantly (Inhoff, Lima, & Carroll, 1984; Ortony et al., 1978), incompatible (literal) meanings of metaphors were nonetheless accessed on account of their salience (Brisard, Frisson, & Sandra, 2001; Janus & Bever, 1985). In all, such findings argue against the inhibition hypothesis. They show that salient meanings were always accessed, regardless of context.

Will contextually incompatible meanings of whole sentences, rather than just their constituents, be activated, regardless of context? According to the graded salience hypothesis (Giora, 1997, 1999, 2003), they will if they are highly salient. Indeed, reading times of whole sentences whose sentential meaning is salient (e.g., familiar idioms) were slower when rich prior context biased them towards their less salient, literal interpretation (Gibbs, 1980; Giora, Fein, Kronrod, et al., 2004). There is then no evidence for inhibition of highly salient but incompatible meanings when the literal–nonliteral issue is considered.

Suppression of Contextually Incompatible Properties

Will incompatible meanings activated initially be discarded as inappropriate following lexical processes? A number of studies have attempted to test suppression of contextually inappropriate, particularly literal meanings of metaphors. An outstanding study in this respect is Keysar's (1994) which showed that suppression of inappropriate meanings of whole sentences does not distinguish literal from metaphorical interpretations. If context falsifies the literal interpretation or renders it implausible, comprehenders opt for the metaphorical one; if context renders the metaphorical interpretation implausible, readers opt for the literal one. If both are acceptable, comprehension is seamless; if both are unacceptable, comprehension runs into difficulty (Keysar, 1989). Context effects thus apply to literal and metaphorical interpretations in a similar fashion.

Some theories assume suppression of metaphor “inappropriate” (literal) properties even in the absence of prior context. One such example is the class inclusion view (Cacciari & Glucksberg, 1994; Glucksberg & Keysar, 1990; Shen, 1992). According to

this view, metaphors of the form X is a Y (*That defense lawyer is a shark*) involve a dual reference to both a basic-level (literal) concept (the literal “shark”) and to an ad hoc, superordinate category constructed on the basis of the basic-level concept (the metaphorical “tenacity”). This dual reference, however, is momentary. Once the superordinate category has been constructed, basic-level information is discarded, enabling a straightforward, frictionless understanding of the metaphor. Suppression of basic-level information thus allows for the metaphor vehicle to uniquely refer to the superordinate category.

To test this suppression hypothesis, Gernsbacher et al. (2001) presented participants with either a metaphoric (*That defense lawyer is a shark*) or a literal (*That large hammerhead is a shark*) class inclusion statements as primes, followed by basic-level target statements (*Sharks are good swimmers*). Reading times of basic-level targets were slower following a metaphoric than following a literal prime. Given that suppression comes with a cost (Gernsbacher, 1990), such findings are consistent with the view that basic-level meanings are suppressed during metaphor interpretation.

However, it is possible that these basic-level (literal) meanings have been rejected on account of their irrelevance to the metaphor interpretation rather than on account of their basic-level abstraction. Had basic-level, metaphor relevant alternatives tested (such as “teeth” or “jaws” when “shark” is at stake), findings might have been different.

Indeed, in Rubio Fernández (2007), following a metaphor (*John is a cactus*), only relevant basic-level meanings (“spike”) were accessible both at short (0, 400 msec) and long (1000 msec) delays. In contrast, irrelevant superordinate meanings (“plant”) were accessible only at the short delays. Such findings demonstrate that basic-level meanings

need not be discarded on account of their basic-level abstraction. Instead, when relevant, they are retainable and partake in the construction of the contextually appropriate metaphoric interpretation despite their contextual misfit.

Hasson and Glucksberg's (2006) study demonstrates reduced levels of activation of irrelevant metaphoric meanings ("fast") of negative metaphors (*The train to Boston was no rocket*) presented out of a specific discourse context. Recall that in their study Hasson and Glucksberg showed that at short delays, incompatible concepts ("fast") were accessible, despite a contextual (negation) cue to the contrary. However, 1,000 msec after offset of the negative statements, no facilitation of incompatible meanings ("fast") was observed. Following negation, then, and in the absence of a specific context, metaphor incompatible meanings were reduced to baseline levels. In a follow-up on Hasson and Glucksberg, however, Giora, Fein, Aschkenazi, et al. (2007) showed that once these items were furnished with late relevant contexts (*The train to Boston was **no rocket**. **The trip to the city was *fast*, though.***), negated metaphors ("rocket") facilitated related concepts (*fast*) even as long as 1000 msec following their offset. Such results demonstrate that, in the presence of a context motivating retention, suppression was not triggered.

Note, further, that, as predicted by the retention hypothesis (Giora & Fein, 1999a, 1999b) studies investigating affirmative metaphors demonstrated that only inappropriate meanings that interfered with the final interpretation of the utterances were suppressed. In contrast, incompatible meanings (e.g., literal meanings of metaphors) conducive to the final interpretation of nonliteral utterance were retained. Thus, in Williams (1992), salient meanings ("strict") of familiar metaphors (*firm*) were shown to be activated initially,

regardless of context (about “teacher,” “bed”). They were however suppressed only in a context (about “bed”) in which they were disruptive. In contrast, salient meanings (“solid”) conducive to the utterance interpretation (*firm teacher*) retained their initial levels of activation even after a long delay, despite their apparent inappropriateness.

Complementarily, findings obtained from word-fragment completion tasks, which tap later processes, showed that salient (literal) meanings of low familiar idioms were retained in idiomatically biasing contexts, suggesting that their apparent inappropriateness or “irrelevance” in that context did not trigger their suppression (Giora & Fein, 1999b). Indeed, as assumed by the suppression/retention hypothesis (Giora, 2003; Giora & Fein, 1999b), since metaphoric and idiomatic interpretations of such strings rely on their literal interpretation for their final output, there is no need for these irrelevant interpretations to be discarded, as they are not disruptive (see also Cacciari & Glucksberg, 1995).

Additional support for this pragmatic view of suppression comes from findings that in literally biasing contexts, retention of the literal interpretations of idioms superceded that of the idiomatic meanings of idioms. In these contexts, where in fact the idiomatic meanings had no role in constructing the final literal interpretation of the utterance, they were not retained. The same pattern was found for high and low familiar metaphors (though not for unfamiliar metaphors; Giora & Fein, 1999b). Interestingly the opposite was found for familiar proverbs and their familiar literal interpretation (Ferretti, Schwint, & Katz, 2007). In an ERP study, Ferretti et al. found that, although reading times did not distinguish figurative from literal targets, brain waves indicated ease of processing in literally rather than in figuratively biasing contexts.

It might be the case that the familiar proverbial meaning of proverbs does not interfere with its literal interpretation. In all, such findings support the view that metaphors and literals are processed along the same lines. When the literal interpretation is disruptive to metaphoric interpretation it is discarded (Giora & Fein, 1999b; Rubio Fernández, 2007; Williams, 1992); when the metaphoric interpretation interferes with making sense of figurative items biased towards their literal interpretations, these interpretations are discarded (Giora & Fein, 1999b). When it is not, it is retained (Ferretti et al., 2007).

Is suppression triggered when no specific context is mentioned? Not really. Indeed, when tested out of a given context, familiar metaphoric words seemed to discard their metaphoric meaning in the left hemisphere. However, these meanings were retained in the right hemisphere. For instance, in Anaki, Faust, and Kravetz (1998), word primes (*stinging*), having salient metaphoric and literal meanings, were shown to be accessed both literally and metaphorically in the left hemisphere but only metaphorically in the right hemisphere. However, after a delay, the metaphoric meaning was retained only in the right-hemisphere, while in the left-hemisphere, it was suppressed, retaining only the literal meaning. The left hemisphere, then, discarded the metaphoric information, which was, however, retained in the right hemisphere.

Retention of Contextually Incompatible Properties

<resume>According to the retention hypothesis (Giora, 2003; Giora & Fein, 1999b), meanings made available by lexical processes would be retained even when contextually incompatible provided they are conducive, or, at least, not detrimental to the final

representation of the output. Evidence of retention of such incompatible meanings was found in the lab as well as in naturally occurring discourses. Recall that in Williams (1992) and Fernández (2007), salient, literal meanings of metaphors, which were shown to be activated initially regardless of contextual fit, were retained when they contributed to the final interpretation of the utterance. However, meanings, which were disruptive to the metaphor representation, were not preserved (see previous section). Similar findings were also demonstrated by Allbritton (1992, as reported in Gibbs, 1994; see also Allbritton, McKoon, & Gerrig, 1995). In this study, recognition of incompatible, literally related probes (“boiling”) was facilitated following a paragraph that instantiated a conventional metaphor involving this meaning both in the outset (*Edward was boiling with anger*) and at the end – at the priming sentence position (*Hoping to prevent a scene, she tried to lower his thermostat*). Such facilitation was not observed following a similar paragraph whose final priming sentence was unrelated to that metaphor. In addition, people showed preference for metaphor resonance. They preferred metaphorical text progression, instantiating the same literal source domain, over one that did not. Thus, *blow your stack* was preferred over *bite your head off* (both alluding to anger) as a continuation of a description of anger, which was put in terms of heated fluid in a container (Gibbs, 1994: 163; Nayak & Gibbs, 1990). This suggests that so-called metaphor irrelevant meanings might be retained for discursive purposes such as maintenance of metaphor resonance. (For evidence demonstrating lack of metaphorical resonance, see Shen & Balaban, 1999). These findings, then, suggest that, instead of suppressing locally incompatible meanings (e.g., literal meanings of metaphors), context

might affect their retention because they might become instrumental in future processes (see Giora, Fein, Aschkenazi, et al., 2007).

Instances of natural discourses, which elaborate on early mention of metaphor irrelevant meanings, also support the retention hypothesis (see examples 2 and 3 above). For example, a recent ad promoting an Israeli daily (*Haaretz*) abounds in references to the literal, irrelevant meaning of the metaphor used. The slogan – *Haaretz. Food for thought* – is placed against a background image of a jam jar whose label resonates with the literal meaning of the slogan: *Haaretz – without a populist sweetener*. In addition, there is a text extending this metaphor, elaborating on its literal meaning: “Haaretz is inviting you to entertain and digest new insights. Haaretz is feeding you with a variety of ideas and opinions. Some of them might even be different from yours. So What? They are only an appetizer” (*Haaretz*, 2004: A11). All these form an array of conventional metaphors whose literal meanings, even those within the scope of negation, are retained and resonate with each other.ⁱⁱ

Indeed, a survey of some spoken American discourses reveals that the incompatible literal meanings of both conventional and novel metaphors are echoed and resonated with in late contexts by both the producer of the speech and her or his interlocutor (Giora, 2003).

Consider, for instance, the elaboration on the literal meaning of the “death” metaphor (gone) in where did they go to (Du Bois, Chafe, Meyer, & Thompson, 2000: SBC: 005):

- (6) PAMELA: ... (H) I just think it's so wei=rd,
that they're go=ne.

... and where did they go to.

This is also true of written discourses as shown by Giora and Balaban (2001). Giora and Balaban collected 60 metaphors from the op-ed section of *Haaretz*, half of which were literally resonated with by their late context. Findings showed that novel and familiar metaphors were equally likely to be followed by a reference to their literal meaning (see 7 below for a recent example). That is, the metaphors, whose literal meaning was resonated with and elaborated on in the immediate or next context, were not evaluated as more or less familiar than those that received no literal extension. Importantly, half of the metaphors that received the highest familiarity ratings had literal extensions. These findings suggest that meanings made available to the producer herself were not discarded automatically, even when contextually incompatible. They were also not retained automatically. Instead, both their suppression and preservation seemed attentive to global discourse consideration rather than to local cues such as local irrelevance.

(7) The billionaires' racehorses

Fifteen years ago, in an interview with *Hadashot*, the late Swiss millionaire Gabai Maimon called Benjamin Netanyahu "my racehorse." Netanyahu's friends in the Likud were scandalized by the blunt language, but ever since, it has been clear that every primary race to elect the party's candidates for Knesset brings out new racehorses from the stables of the wealthy. In effect, any self-respecting businessman now keeps at least one such racehorse in his stable (Kim, 2004).

This is also true of contrastive metaphors, which resonate with the opposite of the literal meaning of a prior metaphoric occurrence:

(8) A war in Iraq will soon break out, and with it a great darkness will descend on events in the territories... This is the time to caution us all that under the cover of that darkness, grave things may come to pass.

Not that there is much light there now, either. (Levy, 2003)

This last metaphor (*Not that there is much light there now, either*) is particularly illustrative because it has an ironic reading. As shown in Giora, Fein, Ganzi, and Alkeslassy Levi (2005), negation of an overstatement (*much light*) results in an ironic reading. This was also true of negative metaphoric overstatements (Giora, Fein, & Aschkenazi, 2004). In Giora, Fein, and Aschkenazi, (2004), the negative metaphors used in Hasson and Glucksberg (2006), which contained top-of-the-scale expressions (*The train to Boston was no rocket*), were rated as more ironic than literal equivalents that did not make up an overstatement (*The train to Boston was not fast*). Clearly, to be read as such, these ironies must have retained their salient but “irrelevant” metaphoric meaning. Indeed, in Pexman et al. (2000), ironic metaphors took longer to read than baseline literals, suggesting that more than one interpretation was involved in the final representation (see also Colston & Gibbs, 2002).

At times, contextually incompatible meanings are retained because they are too salient to be quenched. Consider the joke Iddo cracks in the following example (9, cited in Giora, 2003: 19). The episode took place at Iddo’s home while he and Omri (native speakers of Hebrew, aged 7 years and 8 months) were eating supper and Iddo had just fetched himself a glass of juice out of the refrigerator:

(9) Omri: I want to drink too.

Iddo's mother: Iddo, *totci lo et ha-mic* ("take the juice out [of the refrigerator] for him").

Iddo (laughingly) ha... ha... *le-hotci lo et ha-mic* ("to take/squeeze the juice out of him" --a Hebrew idiom meaning "drive him crazy").

While the contextually compatible interpretation of this idiom is literal, the salient idiomatic meaning could not escape the addressee's mind. Though disruptive, it was difficult to suppress and was therefore retained for humorous purposes.

Findings, then, demonstrating retention of contextually incompatible meanings, irrespective of figurativeness or literalness, are explainable only by the graded salience hypothesis and the suppression/retention hypothesis (Giora, 1997, 1999, 2003; Giora & Fein, 1999b). They are not accountable by the alternative models.ⁱⁱⁱ

Metaphor and Discourse Coherence

Would metaphors and literals affect discourse coherence differently? Are metaphors unique in this sense? According to the standard pragmatic model (Grice, 1975, Searle, 1979) they are: metaphors but not their literal interpretations involve an overt breach of a coherence norm to be alleviated by inferential processes of adjustment to contextual information. On this view, metaphors should take longer to read than literals and should score lower on coherence ratings. The direct access view anticipates no processing difficulties for metaphors relative to their literal interpretation when prior context is rich and supportive (Gibbs, 1994; Ortony et al., 1978). It therefore predicts similar reading times for metaphors and their literal counterparts and similar coherence ratings for the

two interpretations. The underspecification view also predicts similar coherence ratings. According to the graded salience hypothesis (Giora, 1997, 1999, 2003), the relevant distinction is not between literals and metaphors but between various degrees of meaning salience. Thus, contextually compatible but less or nonsalient meanings would often take longer to activate (depending on their sentential position, see Peleg et al., 2001, 2004) and would be rated as less coherent than contextually compatible but salient meanings, regardless of metaphoricity. This predicts that utterances whose less or nonsalient interpretation is contextually compatible (novel metaphors intended figuratively; highly familiar metaphors and idioms intended literally) would take longer to read and would be rated as less coherent than their more accessible counterparts (literal meanings of novel metaphors intended literally; figurative meanings of highly familiar metaphors and idioms intended figuratively). However, similarly familiar utterances (familiar metaphors intended figuratively and their familiar literal interpretations intended literally) would take equally long to read and would be rated as similarly coherent. Coherence, then, is not a matter of literality or figurativeness but a function of the salience of the intended interpretations.

Indeed, as predicted by the graded salience hypothesis, idioms (*spill the beans*) took longer to read in a context inviting their less salient, literal interpretation than in a context inviting their more salient idiomatic meaning (Gibbs, 1980; Giora, Fein, Kronrod, et al., 2004). Novel metaphors (*their bone density is not like ours*) took longer to read in a context inviting their nonsalient, figurative interpretation than in a context inviting their more accessible, literal interpretation (Giora & Fein, 1999b, see also Brisard et al., 2001;

for different findings see Ortony et al., 1978); familiar metaphors (*wake up*) did not take longer to read than their familiar literal interpretations (Giora & Fein, 1999b).

Similarly, as predicted by the graded salience hypothesis, contextually compatible familiar metaphors and their literal interpretation did not vary in terms of coherence. In contrast, contextually compatible novel metaphors were rated as less fitting with prior context than their literal equivalents. In addition, most highly familiar metaphors (*big eyes*) were rated as less coherent when embedded in a context inviting their less salient literal interpretation than in a context inviting their highly salient figurative meaning (Giora, Fein, Kronrod, et al., 2004; Shuval & Giora, 2005). Coherence then is sensitive to degree of salience rather than to literality or metaphoricity.

Metaphor and Aesthetics

Is figurativeness unique in that it is more pleasing or aesthetic or more creative than literal language, as assumed by the classical view of metaphor (Aristotle, 350 BCE-a, b; see also Sopory & Dillard, 2002)? According to the optimal innovation hypothesis (Giora, 2003; Giora, Fein, Kronrod, et al., 2004), it is not. Instead, it is optimal innovativeness that is aesthetic. An optimally innovative stimulus is one that evokes a novel response while allowing for the recovery of a salient one from which it differs qualitatively. *Smash Capitalism* in the context of example (2) constitutes an optimal innovation. While activating the salient nonliteral sense of the expression, it also allows an insight into its more concrete, less salient, literal interpretation from which it differs significantly. Optimal innovation would thus be more pleasing than either a more or a less familiar stimulus, regardless of figurativeness.

Findings indeed showed that metaphoric interpretations of novel metaphors, which, by definition, are optimally innovative, were rated as more pleasing than their more familiar, literal counterparts. In contrast, no such difference was found for familiar metaphors and their literal interpretations, which were rated as similarly pleasing. Given that both their literal and nonliteral meanings enjoy similar salience, they do not involve optimal novelty and were therefore indistinguishable from each other. In contrast, since the less salient, literal interpretations of highly familiar metaphors constitute optimal innovations, they were rated as more pleasing than their salient, metaphoric meanings (Giora, Fein, Kronrod, et al., 2004; Shuval & Giora, 2005). These studies support the view that it is not figurativeness that accounts for aesthetic judgments but optimal innovativeness.

Neurological Correlates and Processing

Mechanisms

The bulk of evidence adduced so far argues against the literal/nonliteral divide. Would more direct evidence such as neural correlates support this lack of distinction? Recent findings from brain research and brain imaging indeed support the view that the crucial distinction is not between literals and nonliterals but between salient and less or nonsalient meanings (Giora, 2007). While the left hemisphere was found to specialize in processing salient meanings of familiar stimuli, the right hemisphere was found to specialize in processing less or unfamiliar stimuli, regardless of metaphoricity (Arzouan, Goldstein, & Faust, 2007; Eviatar & Just, 2006; Giora & Stringaris, in press; Giora,

Zaidel, Soroker, Batori, & Kasher, 2000; Mashal & Faust, 2008; Mashal, Faust, Hendler, 2005; Mashal, Faust, Hendler, & Jung-Beeman 2007, in press; Papagno, Oliveri, & Romero, 2002; Schmidt, DeBuse, & Seger, 2007; Sotillo et al., 2005; Sundermeier, Virtue, Marsolek, & van den Broek, 2005). Such studies corroborate earlier results showing that the left hemisphere is engaged in processing conventional verbal metaphors (Winner & Gardner, 1977) while the right hemisphere is engaged in processing novel metaphors (Bottini et al., 1994).

An exception in this respect is a study by Rapp, Leube, Erb, Grodd, & Kircher (2004) who found activation in the left hemisphere for novel metaphors. It is possible, however, that this was affected by a nonlinguistic task, which involved judging whether the targets had a positive or negative connotation (p. 401).

But even utterances having similarly familiar interpretations such as literal (*Some men are soldiers*) and metaphoric (*Some men are lions*) class inclusion statements, taking similarly long to read, might involve some different underlying processes. Using brain imaging, Stringaris, Medford, Brammer, Giampietro, and David (2007) showed that while these similarly accessible targets were largely processed in the left hemisphere, they engaged different areas in that part of the brain. Specifically, they showed that, in addition to increased involvement of areas classically associated with linguistic processing, the left thalamus was recruited for the processing of metaphors but not of literals (see also Mashal et al., in press. For somewhat conflicting findings, see Mashal et al., 2007, in which not just two-word metaphoric expressions but also such literal expressions activated the left thalamus compared to meaningless expressions). Stringaris et al. suggest that this might highlight some difference between metaphoric and literal

class inclusion statements. In the former, but not in the latter, processing involves the identification of shared properties resulting in the construction of a novel and emergent ad hoc concept. Such findings might allude to metaphors' open-endedness, they argue. Indeed, such findings tie up with studies demonstrating that figurative expressions such as idioms, while being understood more quickly than literal paraphrases, yet convey a wider range of entailments (Gibbs, 1992). They further agree with the assumption that figurative language may be more poetic in that it allows for a wider range of weak implicatures than literals (Sperber & Wilson, 1986/1995). These claims, however, will have to be tested against studies of literal puns of various degrees of salience and literal optimal innovations, which seem to make up a more appropriate literal counterpart for metaphors than the literals examined (see Coulson & Severens, 2007; Mashal et al., in press for an initiation). In any event, such studies suggest that the time it takes to process an utterance is not necessarily a good indicator of the underlying processes involved.

Is metaphor processing different from irony interpretation? Colston and Gibbs (2002) embedded metaphoric utterances (*This one's really sharp*) in irony and metaphor inducing contexts. They showed that targets took longer to read when intended ironically than when intended metaphorically. However, a close look at the items used suggests that, while most of the targets had a salient metaphoric sense, their ironic interpretation was novel, which might explain the different reading times found.

A similar attempt to compare metaphors and ironies was made by Pexman et al. (2000). Using moving windows, Pexman et al. embedded familiar (*Children are precious gems*) and less familiar metaphors (*Her mind is an active volcano*) in irony inducing contexts. They found that reading times of less familiar (metaphoric and ironic) targets,

measured at the figurative key word (*volcano*) of the statement, at the space following that word, and at the first word of the next sentence, increased relative to familiar items (embedded in metaphor inviting contexts). Such findings do not attest to differences involved in irony and metaphor processing. Rather, they contrast *familiar* and *unfamiliar* metaphors but equate *unfamiliar* instances of both irony and metaphor. They thus disclose differences involved in processing items of different salience. Indeed, neural correlates of the processes involved in making sense of conventional metaphors versus nonconventional ironies reveal specialization of the left hemisphere in recessing metaphors and selective right-hemisphere involvement in comprehension of nonsalient ironic language (Eviatar & Just, 2006; Giora et al., 2000). Although metaphor and irony involve different comparison processes (similarity vs. contrast), there is not enough evidence yet to suggest that they are processed differently.

Counterexamples?

On the view that, unlike literals, many metaphors involve conceptual mappings from source to target domain (notably Lakoff, this volume; Lakoff & Johnson, 1980; Lakoff & Turner, 1989), metaphor might indeed be unique. But is it really the case that source to target domain mappings are different for metaphors than for literal expressions?

According to Coulson (Coulson, this volume; Coulson & Van Petten, 2002) it is not.

Rather, some literals involve literal mappings comparable to metaphors. For instance, in *That stone we saw in the natural history museum is a gem*, the literal sense of the target word (*gem*) conveys its conventional, literal meaning and should involve simple processes. However, *The ring was made of tin, with a pebble instead of a gem* invites

literal mappings – mappings of conceptual structure from a different domain. It should therefore require more complex processes. In contrast, processing the target in *After giving it some thought, I realized the new idea is a gem* should induce most complex processes, because the speaker's idea should induce metaphorical mapping – it should be metaphorically linked to a gemstone to evoke properties such as brightness and clarity.

Findings indeed show that metaphors elicited the largest N400s (N400 brain waves' amplitude is largest for contextually incompatible or surprising items). Next came the literal mappings, eliciting larger N400s than the literals. These results, thus, establish a complexity continuum in place of the literal/nonliteral divide (for a salience-based analysis of these findings, see Giora, 2003: 120). In addition, evidence from research into optimal innovations (Giora, Fein, Kronrod, et al., 2004) allows us to suspect that literal (*Till barriers do them part*, see 1) and metaphorical optimal innovations might involve similar mapping processes.

Conclusions

Is metaphor unique in any sense then? Although we might have entertained the thought that metaphor is special, most of the evidence adduced so far offers but limited support of it (see also Giora, 2002). Rather, the bulk of evidence presented here argues against the literal/nonliteral distinction. Instead, it proposes the salient-nonsalient continuum. Thus, there is ample evidence suggesting that meanings are accessed in order of their salience rather than in relation to their literality or nonliterality. Similarly, there is also enough evidence showing that it is not the incompatible literal meaning of metaphors that is always suppressed. Suppression might discard irrelevant meanings regardless of

figurativeness or literality. Similarly, it is not only the irrelevant literal meaning that is retained. Once contextual processes invite retention of irrelevant meanings, they are retained regardless of literalness or nonliteralness. Similarly, it is not metaphor that is incoherent; it is less and at times nonsalient meanings that are difficult to integrate into recently constructed representations. Likewise, it is not metaphor that is pleasing; it is optimal innovation that is aesthetic, whether literal or nonliteral (for more research on the non-uniqueness issue, see also Giora, 2002, 2003, 2007; Giora & Stringaris, in press).

Is metaphor unique in that it is, at least, the only source of metaphoric or poetic effects? The following poem (10) by Aharon Shabtai (2005: 8; my translation) might disabuse us even of this belief. Although the poem is entirely literal, involving literal similes, it results in metaphorical implicatures. Thus, “Sharon is like a man” implies that the Israeli Prime Minister is not human – not a “man” in the metaphoric sense:

(10) Sharon is like a man

Sharon is like a man,

And the dawning peace is like peace

And the newspaper trumpeting it

Is like a newspaper,

The teachers are like teachers,

And education is like education.

Out of the window of bus number 5

I look at the people on the sidewalks,

Following them in my thought,

And it all confirms

They are like people,
The shoes, the bitten falafel, etc.
At the grocery,
In nervous hands
I test the potatoes
And they too, they too
Are like potatoes.

Metaphor, then, is not the only source of poetics or even of metaphorical interpretations. It seems that notions such as “resonance” (Du Bois, 1998) and “optimal innovation” (Giora, Fein, Kronrod, et al., 2004) can be considered as additional sources for poetic effects.

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Notes

ⁱ In Du Bois (1998), resonance is defined as “the catalytic activation of potential affinities across utterances,” which while activating affinities may also induce change.

ⁱⁱ For the view suggesting that these meanings might emanate from their “root metaphor,” that is, from preexisting conceptual mappings between conceptual domains, see Lakoff (this volume) and Lakoff and Johnson (1980).

ⁱⁱⁱ Retention of meanings made available by interlocutors during conversation or during writing might originate in and allow for a more comprehensive communicative machinery titled “dialogic syntax” (Du Bois, 1998, 2001), whose verbal manifestation results in a vast amount of resonance of speakers’ utterances with their own and others’ utterances.